



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/309,868	09/21/1994	HIDENARI YASUI	28	6704
7590 07/30/2004				
FLYNN, THIEL, BOUTELL & TANIS 2026 RAMBLING ROAD KALAMAZOO, MI 49008				
EXAMINER BECKER, DREW E				
ART UNIT PAPER NUMBER				
1761				

DATE MAILED: 07/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

08/309,868

Applicant(s)

YASUI ET AL.

Examiner

Drew E Becker

Art Unit

1761

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 2-5 and 11-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-5 and 11-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Appeal Brief*

1. Prosecution of this case is hereby reopened by the examiner and, therefore, the finality of the previous action is withdrawn. In addition, the after-final amendment filed March 29, 2004 will be entered. Any inconvenience is sincerely regretted.

### *Double Patenting*

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 2-5 and 11-16 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 of U.S. Patent No. 6,086,766 in view of Smith et al [Pat. No. 3,591,491]. It would have been obvious to one of ordinary skill in the art to withdraw the liquid phase, as taught by Smith et al, since this was the nearly universal goal of waste treatment methods as shown by Smith et al.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 2-5 and 11-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. Claims 11-12 recites "composed essentially of". It is not clear whether this phrase is meant to be used as an open-term, such as "comprising", or whether it is meant to be used as a closed-term, such as "consisting".
7. Claims 11-12 recites "it". It is not clear what "it" is.
8. Claim 11 recites the step of "recycling... sludge" twice. It is not clear whether this describes a single step, or two separate steps.
9. Claim 11 recites "taking plate at a pH". It is believed that "plate" should be replaced with "place".
10. Claims 13-14 recites the limitation "the amount of excess sludge". There is insufficient antecedent basis for this limitation in the claim.
11. Claims 13-14 recites the limitation "the bioreactor". There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 2, 5, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al [Pat. No. 3,591,491] in view of JP 360118299A.

Smith et al teach a method of treating waste by aerating an organic waste into an aeration tank in the presence of aerobic microorganisms (Figure 1, #29), separating the suspension into a sludge and liquid phase (Figure 1, #32), withdrawing the liquid phase as treated water (Figure 1, #60), recycling at least a portion of the sludge back to the aeration tank (Figure 1, #45), ozonizing the sludge (Figure 1, # 49; column 6, line 58), recycling the ozonized sludge back to the aeration chamber (Figure 1, #45), and optimizing flow levels and amounts to reduce excess solids (column 6, lines 30-34; column 7, lines 11-25). Smith et al do not recite a pH of 5 or less created by an agent. JP 360118299A teaches a process for treating waste by ozonizing at a pH of 3-6, which is due to the addition of an acid (abstract). It would have been obvious to one of ordinary skill in the art to incorporate the pH level of JP 360118299A into the invention of Smith et al since both are directed to methods of treating waste, since Smith et al already included an ozonizing step but simply did not mention the pH level (column 6,

line 58), and since JP 360118299A teaches that waste was commonly and effectively ozonized at a pH of 3-6 (abstract).

14. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al, in view of JP 360118299A, as applied above, and further in view of JP 404225900A.

Smith et al and JP 360118299A teach the above mentioned concepts. Smith et al and JP 360118299A do not recite anaerobic acidogenesis and heating to 50-100°C. JP 404225900A teaches a method of treating waste by heating sludge to 30-60° and anaerobic acidogenesis (abstract). It would have been obvious to one of ordinary skill in the art to incorporate the heating and anaerobic acidogenesis of JP 404225900A into the invention of Smith et al, in view of JP 360118299A, since all are directed to methods of treating waste, since Smith et al already microbial digestion (Figure 1, #29 & 61), since JP 360118299A already included adjusting the pH to 3-6 (abstract), since the anaerobic acidogenesis of JP 404225900A would have eliminated the need to add an acid as done by JP 360118299A, and since many types of anaerobic bacteria were more active at elevated temperatures, such as those taught by JP 404225900A.

15. Claims 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al, in view of JP 360118299A, as applied above, and further in view of Dorau et al [Pat. No. 5,362,395].

Smith et al and JP 360118299A teach the above mentioned concepts. Smith et al and JP 360118299A do not recite a membrane separation unit. Dorau et al teach a method of treating waste by use of a membrane separation unit (abstract). It would have been

obvious to one of ordinary skill in the art to incorporate the membrane separation of Dorau et al into the invention of Smith et al, in view of JP 360118299A, since all are directed to methods of treating waste, since Smith et al already included a separation step (Figure 1, #32), and since membrane separation was a commonly practiced means of separating waste sludge and liquid as taught by Dorau et al (abstract).

16. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al, in view of JP 360118299A, as applied above, and further in view of Lowther [Pat. No. 4,178,239].

Smith et al and JP 360118299A teach the above mentioned concepts. Smith et al and JP 360118299A do not recite ozonizing the aerated suspension. Lowther teaches a method of treating waste by ozonizing the aerated suspension (Figure 1). It would have been obvious to one of ordinary skill in the art to incorporate the ozonizing of Lowther into the invention of Smith et al, in view of JP 360118299A, since all are directed to methods of treating waste, since Smith et al already included ozonizing (Figure 1, #49), and since Lowther teaches that ozonizing the aerated suspension provided improved overall sewage removal (column 4, lines 14-40).

### ***Response to Arguments***


17. Applicant's arguments with respect to claims 2-5 and 11-16 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 1761

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Drew E Becker whose telephone number is 571-272-1396. The examiner can normally be reached on Mon.-Thur. 8am-5pm and every other Fri. 8am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Drew E Becker  
Primary Examiner  
Art Unit 1761  
7-28-04